

### How sound travels

- When objects vibrate, a sound is made.
- The vibration makes the air around the object vibrate and the air vibrations enter your ear. These are called sound waves.
- If an object is making a sound, a part of it is vibrating, even if you cannot see the vibrations
- Sound waves travel through a medium (such as air, water, glass, stone, and brick).

### Pitch

- The pitch of a sound is how high or low it is.
- A squeak of mouse has a high pitch
- A roar of a lion has a low pitch.



- A high pitch sound is made because it has a high frequency.
- The sound source vibrates many times a second.
- You can change the pitch of a sound in different ways depending on the type of instrument you are playing.

### Volume

- The volume of a sound is how loud or quiet it is.
- Quieter sounds have a smaller amplitude and less energy (smaller vibrations) and louder sounds have a bigger amplitude and more energy.
- The closer we are to a sound source the louder it will be.

### How we hear

- Inside your ear, the vibrations hit the eardrum and are then passed to the middle and then the inner ear.
- They are then changed into electrical signals and sent to your brain. Your brain tells you that you are hearing a sound.



### Decibel scale (dBA)



## Year 4 Science Spring 1 Sound Physics

### Did you know?

Sound travels at 770 miles per hour. This is slower than light (which travels at 186,000 miles per second). That is why you can see lightning before you hear it.

### Vocabulary

Word	Definition
Energy	Sound energy is a type of energy that we can hear
Decibels	A unit used to measure the loudness of sounds. It is abbreviated to dB.
Insulation	A material used to block sounds.
Frequency	The speed of the vibrations is known as their <b>frequency</b> . The higher the frequency, i.e. the faster the vibrations, the higher the pitch.
Pitch	Sounds can be <b>high</b> or <b>low</b> . This is known as the <b>pitch</b> of the sound.
Vibration	Vibrations are invisible waves that move quickly up and down.
Volume	Sounds can also be <b>loud</b> or <b>quiet</b> . This is known as the <b>volume</b> of the sound.
Sound waves	Vibrating forms of energy that look like waves

